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**Hydropower Investment  
Promotion Project (HIPP)**

# **ESCO's Role and Involvement in ETM and GEMM**



APRIL 2012



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## **Benefits For Georgia**

The GEMM and ETM are designed and intended to advance the GoG's Electricity Sector Policies:

- To increase investments in electricity sector
- To minimize barriers for Georgian HPPs entering in Turkish and EU competitive electricity markets
- To benefit Georgian domestic Tariff customers via improved quality service and reasonable price of electricity



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### What is GEMM 2015?

- Georgian Electricity Market Model (GEMM) in 2015 is envisaged as a mechanism that enables electricity trading on the regional competitive power markets and at the same time protects domestic tariff costumers;
- GEMM 2015 is harmonized with regional competitive power markets, carrying necessary **minimal** technical and legal requirements to benefit from the energy trade.



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## **Why do we need an Electricity Trading Mechanism (ETM)?**

- Turkey and Georgia signed the Cross Border Energy Trading Agreement in January 2012 that set forth general conditions for electricity trading across the new interconnection between Akhaltsikhe, Georgia and Borchka, Turkey. But the agreement **does not** provide the detailed rules needed to sell across the new interconnection.
- For any generator to sell into a foreign competitive electricity market, certain minimum standards are required.
- For the EU and Turkish electricity markets, EU principles and standards of competitive electricity markets are used.



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### Why do we need an ETM?

- The standards require a transparent hourly balancing market that fairly allocates the costs related to inaccurate forecasting of generation production/imports and customer demand/exports on both sides of the border.
- The balancing market and its associated settlement system should be managed by an independent market operator (MO) and a clearinghouse (CH) which will ensure payment of settlements.
- These minimum standards constitute the **electricity trading mechanism**.
- The standards also require that an independent and competent energy regulator oversee and monitor the competitive electricity market.



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## **USAID Proposed Initiative**

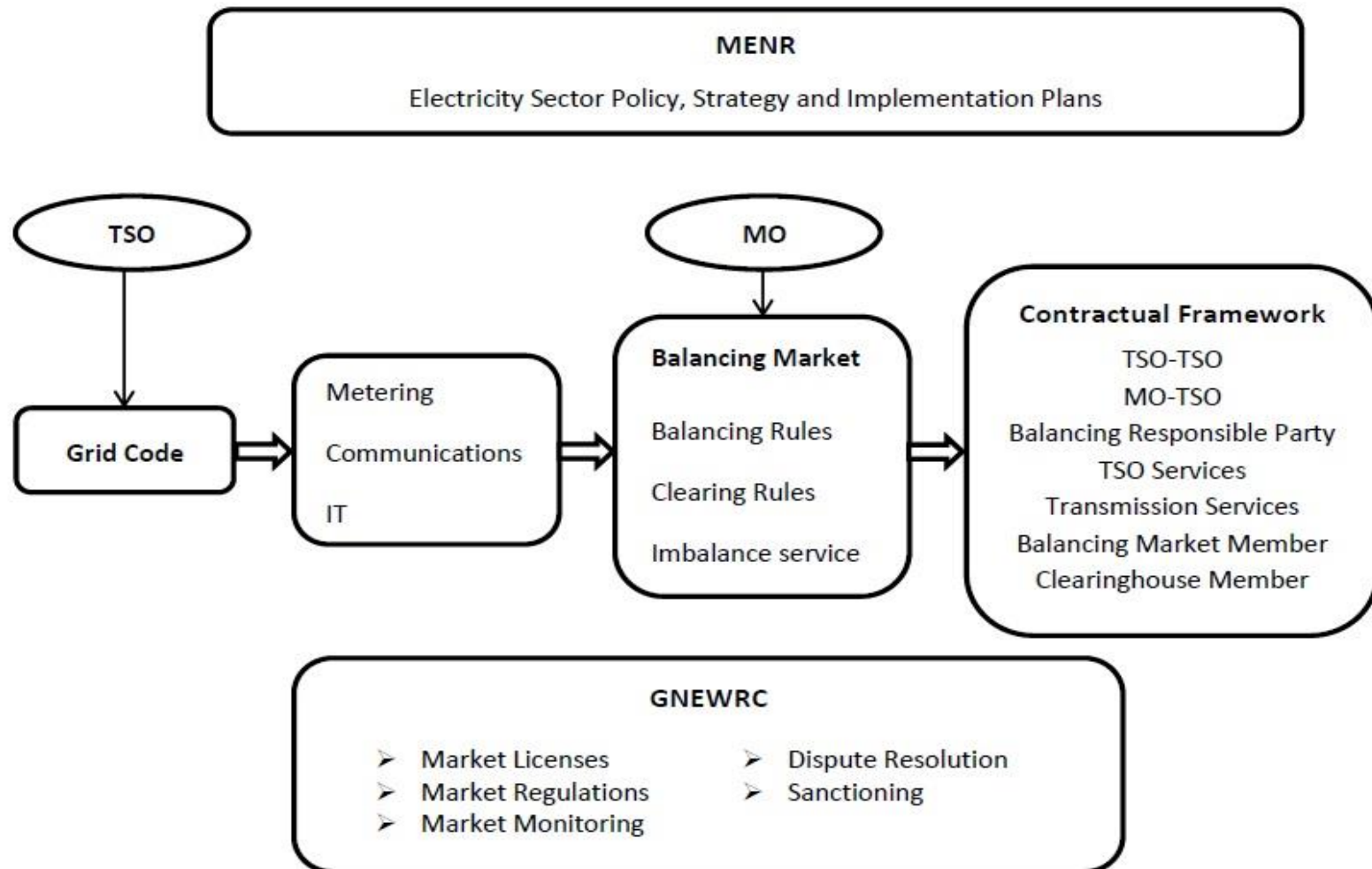
- Come to agreement on a plan to implement the enabling trading mechanism with both GoG and IFIs.
- Shift HIPP's main focus from promotional activities to support of the enabling energy trading mechanism.
- HIPP has developed:
  - A statement of intent (4 pages)
  - Vision of electricity market in 2015 (40+ pages)
  - Roadmap for reaching the 2015 Vision (~15 pages)
  - Action plans for each implementing party
  - Technical Assistance and Infrastructure Improvement Plan



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### Vision Statement: what should be in place

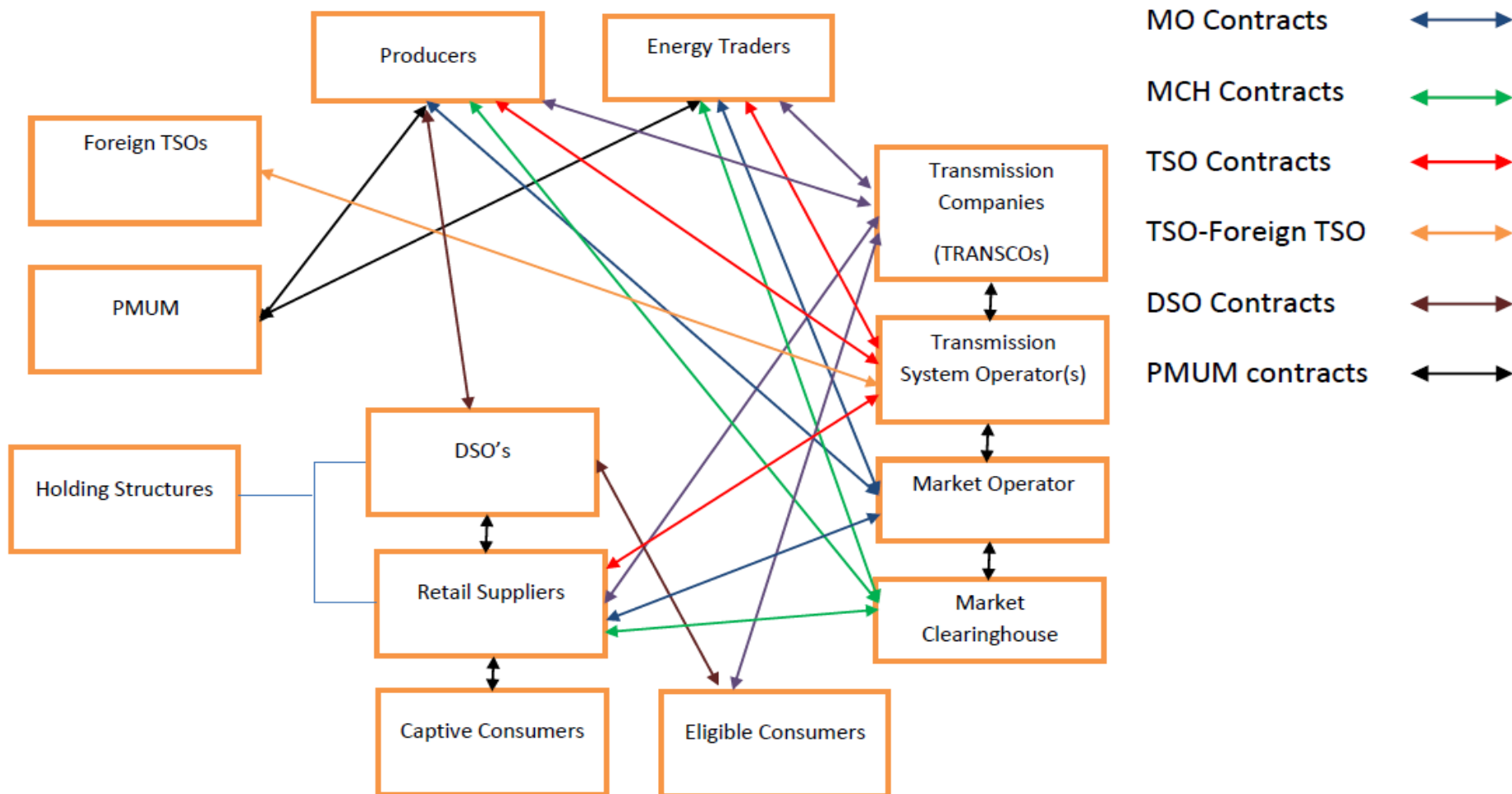




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### Vision Statement: Parties to Service Contracts under GEMM 2015







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## **How to achieve GEMM? (Road Map)**

- It will require a great deal of effort by all parties currently operating in the electricity sector of Georgia as well as a significant amount of donor and IFI support.
- Road Map discussion document describes what should be done in order to achieve GEMM 2015;

[illegible]



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## **Envisaged ESCO's current functions under the GEMM 2015**

Current functions of ESCO will be separated  
and more functions will be added as required  
for hourly balancing

- **MO** - carrying hourly balancing activities and ensuring market performance.
- **Consolidator** - trading output from small HPPs and supporting its sales.



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## **What's the main difference between ESCO and MO?**

- ESCO buys and sells balancing electricity. So, it takes risk and becomes owner of the power (acts as trader)
- MO operator manages electricity market, it matches offers and bids for the balancing market (acts as a broker)



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### Balancing

- MO selects the balancing entities that can provide real time balancing.
- MO determines the prices for ramping up and ramping down (generation and load).
- TSO dispatch the balancing entities within its control area.
- The MO calculates the differences between the scheduled (generation and loads) and the actual (generation and loads) for all market participants. Providing the difference (positive or negative) is called imbalance service.
- The cost of the real time balancing for an hour is allocated to any market participant that used imbalance service.



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## **Why imbalance service?**

- Imbalance service allocates the liabilities in the competitive power market to those that created the imbalance.
- Metering/communications is required at all commercial points so that information can be viewed instantaneously
- Calculation of liabilities (settlements) are done for each hour – there are no deferrals of liabilities
- Prices of balancing will depend on the many factors – liability may be created in neighboring market



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# Implementation Parties Action Plans: ESCO

Market Operator	ESCO/MO 2012	ESCO/MO/Consolidator 2013	MO/Consolidator 2014	MO 2015
1	MO functions within ESCO created - September	MO-TSO agreements executed	Independent MO and Consolidator Established-September	
2	Employees transferred/hired -September	Consolidator function within ESCO has established - September	Updated Balancing Rules Drafted	
3	Balancing Market Rules drafted - October	Consolidation agreement template - November	Contribute to GEMM 2017 Vision - February	
4	Initial Market Operating Rules drafted - October/November	MO-MO contract template developed - January	Draft Final Market Operating Rules- December	
5	Employees trained able to balance operations - October-December	Database development for balancing market -January-July		
6	Database development for balancing market -December			
7	Bal. software installed -December			
8	MO to TSO contract template drafted- October/November			
9	Electricity Market settlement rules drafted - November/December			



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# ESCO's key activities in 2012

## 1. Establishing new units within ESCO

- Creation (September)
- Hiring of new employees (September)
- Training of employees (October – December)

## 2. Draft contract templates and rules

- market operating rules
- balancing market rules
- Electricity market settlement rule
- MO – TSO contract template

## 3. New Infrastructure installation

- IT design
- Balancing market matching software

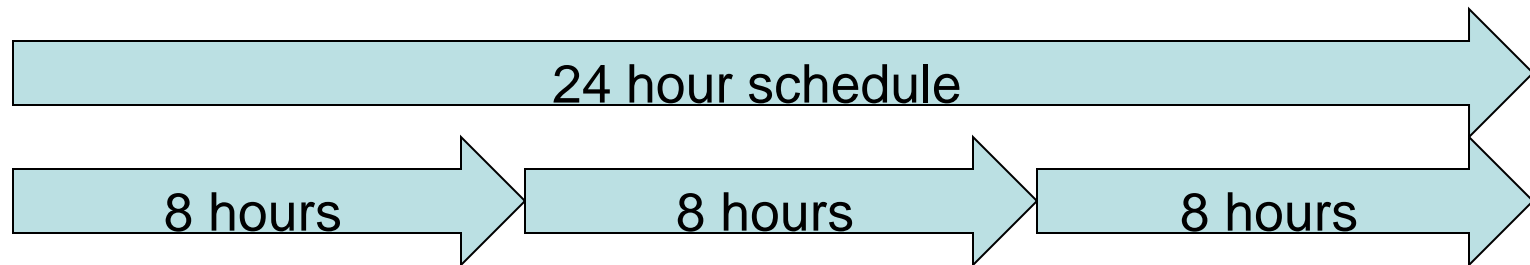




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## Challenges



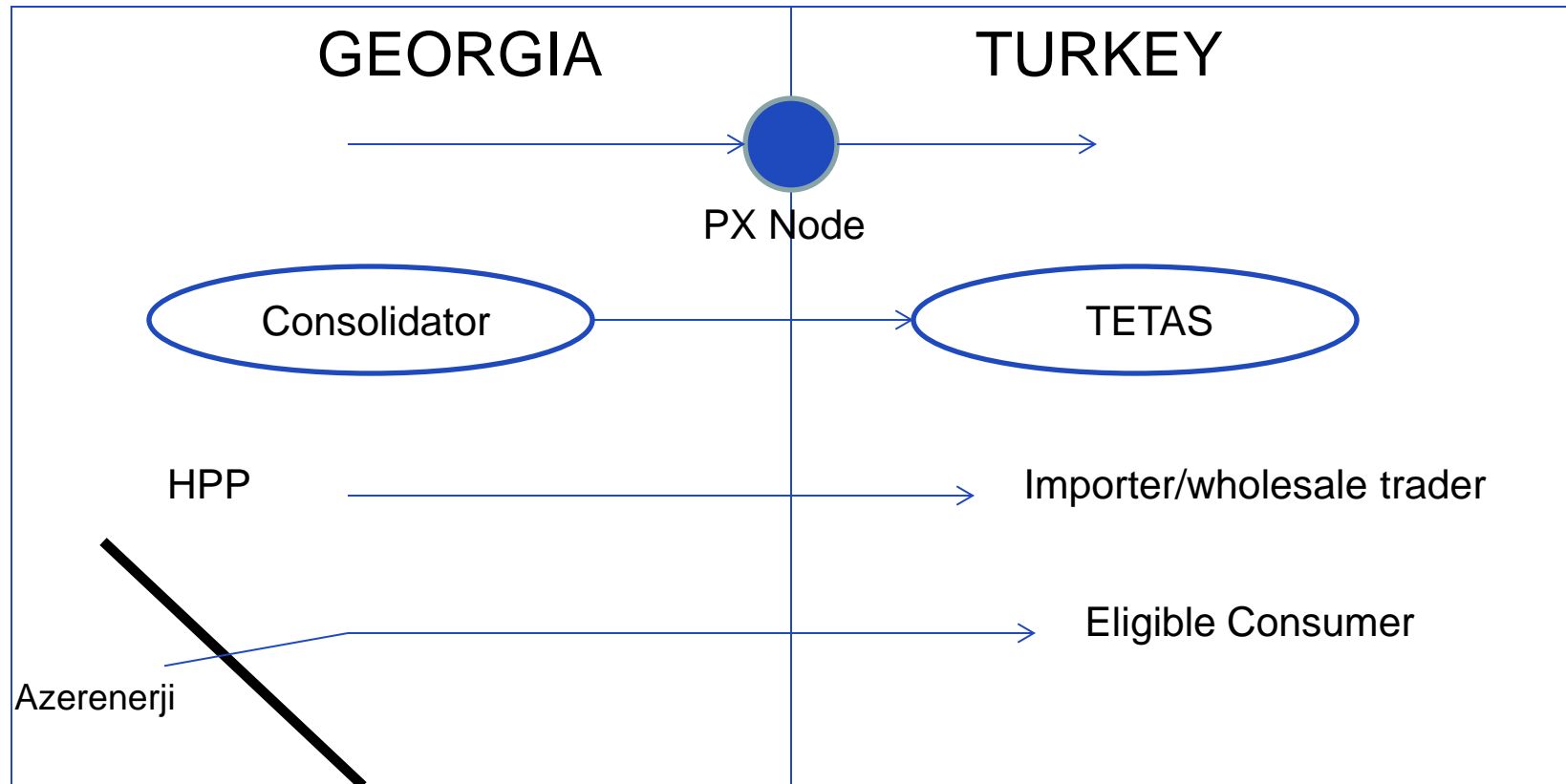
**Turkish power market is continuing movement toward increased competition – for example, scheduling will be done intraday soon.**



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### Examples of C-B Trading





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## USAID Proposed Initiative

- USAID would like to request key Stakeholders to:
  - Agree to coordinate all activities on the trading mechanism in a special **working group**
  - Speak with **one common voice** on the electricity trading mechanism
  - Provide **feedback** on proposed draft documents/process
  - Provide **financial support**, if feasible, on certain aspects of the initiative
  - Agree on deadlines/**conditionalities** with GoG
  - Perhaps create a **joint implementation agreement**



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